

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A propylene polymer of which the heat of fusion  $\Delta H$  (J/g) and the melting point  $T_m$  ( $^{\circ}\text{C}$ ) measured through differential scanning calorimetry satisfy the following relationship:  $\Delta H \geq 0.45 \times T_m + 22$  which satisfies the following requirements (1) to (4):

- (1)  $\Delta H \geq 0.45 T_m + 22$ , wherein  $\Delta H$  is a heat of fusion (J/g) and  $T_m$  is a melting point ( $^{\circ}\text{C}$ ) measured through differential scanning calorimetry;
- (2)  $110 \leq T_m \leq 140$ , wherein  $T_m$  is the melting point;
- (3)  $T_h \leq 5$ , wherein  $T_h$  is a half-value width ( $^{\circ}\text{C}$ ) of the peak top of its elution curve, the elution curve being obtained in programmed temperature fractionation where a sample solution in o-dichlorobenzene is fractionated by raising the temperature from  $0^{\circ}\text{C}$  to  $135^{\circ}\text{C}$  at a heating rate of  $40^{\circ}\text{C/hr}$ ; and
- (4) an intrinsic viscosity  $[\eta]$  of 0.5 to dl/g when measured in a solvent of tetralin at  $135^{\circ}\text{C}$ .

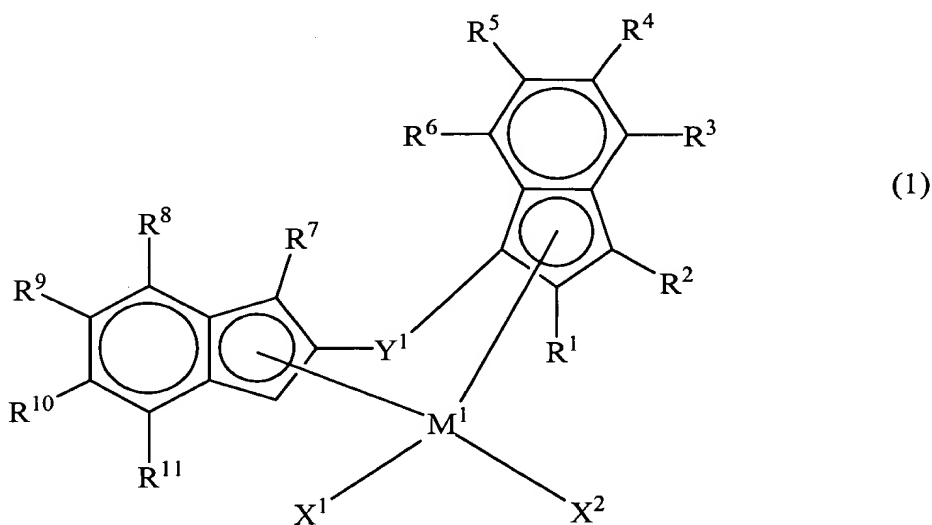
Claims 2-11 (Cancelled).

Claim 12 (Previously Presented): The propylene polymer as claimed in claim 1, which is a propylene homopolymer having an isotactic pentad fraction (mmmm) of from 65 to 85 mol%.

Claim 13 (Previously Presented): The propylene polymer as claimed in claim 1, which is a propylene homopolymer having an isotactic pentad fraction (mmmm) of from 70 to 80 mol%.

Claim 14 (Previously Presented): A molding obtained by molding the propylene polymer of claim 1.

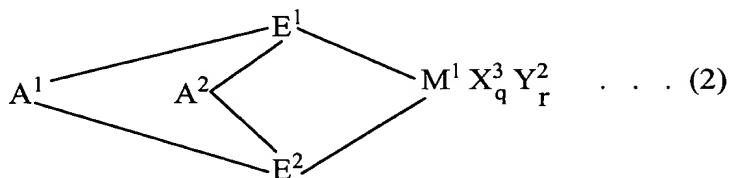
Claim 15 (Currently Amended): A method for producing the propylene polymer of claim 1, which comprises polymerizing propylene or propylene with ethylene and/or an  $\alpha$ -olefin having from 4 to 20 carbon atoms, in the presence of an olefin polymerization catalyst that contains (A) a transition metal compound of the Group 4 of the Periodic Table represented by the following general formula (1), and (B) at least one compound selected from the group consisting of (B-1) aluminiumoxy compounds and (B-2) ionic compounds, the ionic compounds being capable of reacting with the transition metal compound to give cations:



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wherein ~~R<sup>1</sup> to R<sup>11</sup>~~ R<sup>8</sup> and R<sup>11</sup> are each hydrogen, R<sup>1</sup> to R<sup>7</sup>, R<sup>9</sup> to R<sup>10</sup>, and X<sup>1</sup> and X<sup>2</sup> each independently represent a hydrogen atom, a halogen atom, a hydrocarbon group having from 1 to 20 carbon atoms, a halogen-containing hydrocarbon group having from 1 to 20 carbon atoms, a silicon-containing group, an oxygen-containing group, a sulfur-containing group, a nitrogen-containing group, or a phosphorus-containing group; R<sup>3</sup> and R<sup>4</sup>, and R<sup>8</sup> and R<sup>9</sup> may be bonded to each other to form a ring; Y<sup>1</sup> is a divalent ~~crosslinking~~ bridging group that ~~crosslinks~~ bridges the two ligands, representing any of a hydrocarbon group having from 1 to 20 carbon atoms, a halogen-containing hydrocarbon group having from 1 to 20 carbon atoms, a silicon-containing group, a germanium-containing group, a tin-containing group, -O-, -CO-, -S-, -SO<sub>2</sub>-, -NR<sup>12</sup>-, -PR<sup>12</sup>-, -P(O)R<sup>12</sup>-, -BR<sup>12</sup>- or -AlR<sup>12</sup>-; R<sup>12</sup> represents a hydrogen atom, a halogen atom, a hydrocarbon group having from 1 to 20 carbon atoms, or a halogen-containing hydrocarbon group having from 1 to 20 carbon atoms; M<sup>1</sup> represents titanium, zirconium or hafnium.

Claim 16 (Currently Amended): A method for producing the propylene polymer of claim 1, which comprises polymerizing propylene or propylene with ethylene and/or an  $\alpha$ -olefin having from 4 to 20 carbon atoms, in the presence of an olefin polymerization catalyst that contains (A) a transition metal compound of the Group 4 of the Periodic Table represented by the following general formula (2), and (B) at least one compound selected from the group consisting of (B-1) aluminiumoxy compounds and (B-2) ionic compounds, the ionic compounds being capable of reacting with the transition metal compound to give cations:



wherein  $M^1$  represents titanium, zirconium or hafnium;  $E^1$  and  $E^2$  each are a ligand selected from a cyclopentadienyl group, a substituted cyclopentadienyl group, an indenyl group, a substituted indenyl group, a heterocyclopentadienyl group, a substituted heterocyclopentadienyl group, an amido group, a phosphido group, a hydrocarbon group and a silicon-containing group, and they form a crosslinked structure via  $A^1$  and  $A^2$ , and they may be the same or different;  $X^3$  represents a  $\sigma$ -bonding ligand, and a plurality of  $X^3$ 's, if any, may be the same or different, and it may be crosslinked with other  $X^3$ ,  $E^1$ ,  $E^2$  or  $Y^2$ ;  $Y^2$  represents a Lewis base, and a plurality of  $Y^2$ 's, if any, may be the same or different, and it may be crosslinked with other  $Y^2$ ,  $E^1$ ,  $E^2$  or  $X^3$ ;  $A^1$  and  $A^2$  each are a divalent crosslinking group that crosslinks the two ligands, representing any of a hydrocarbon group having from 1 to 20 carbon atoms, a halogen-containing hydrocarbon group having from 1 to 20 carbon atoms, a silicon-containing group, a germanium-containing group, a tin-containing group, -O-, -CO-, -S-, -SO<sub>2</sub>-, -NR<sup>12</sup>-, -PR<sup>12</sup>-, -P(O)R<sup>12</sup>-, -BR<sup>12</sup>- or -AlR<sup>12</sup>-; R<sup>12</sup> represents a hydrogen atom, a halogen atom, a hydrocarbon group having from 1 to 20 carbon atoms, or a halogen-containing hydrocarbon group having from 1 to 20 carbon atoms; and  $A^1$  and  $A^2$  may be the same or different; q is an integer of from 1 to 5, indicating ((valence of  $M^1$ ) - 2); and r is an integer of from 0 to 3.

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Contd.

Claim 17 (Previously Presented): The method for producing the propylene polymer as claimed in claim 15, wherein propylene or propylene with ethylene and/or an  $\alpha$ -olefin having from 4 to 20 carbon atoms is polymerized in a vapor phase.

Claim 18 (Previously Presented): The method for producing the propylene polymer as claimed in claim 15, wherein propylene or propylene with ethylene and/or an  $\alpha$ -olefin having from 4 to 20 carbon atoms is polymerized in the presence of liquid propylene.

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